

# Calculation of genetic relatedness/relationship between individuals in the pedigree

Gregor Gorjanc  
gregor.gorjanc@bfro.uni-lj.si,  
David A. Henderson  
dnadave@insightful.com

October 30, 2025

## Introduction

?

## Kinship?

?, Malecot 1948, Emik and Terill 1949

Falconer and Mackay (1996) Lynch and Walsh (1998)

Meuwissen and Luo (1992) Boichard (2002) Sargolzaei et al. (2005)

Oliehoek et al. (2006) on various relatedness estimators between individuals in general i.e. panmictic and structured populations.

> 1+1

[1] 2

## References

- Boichard, D. (2002). PEDIG: a fortran package for pedigree analysis suited for large populations. In *Proceedings of the 7th World Congress on Genetics Applied to Livestock Production, Montpellier, 2002-08-19/23*, volume 32, pages 525–528. Castanet-Tolosan, INRA.
- Falconer, D. S. and Mackay, T. F. C. (1996). *Introduction to Quantitative Genetics*. Longman, Essex, U.K., 4th ed. edition.
- Lynch, M. and Walsh, B. (1998). *Genetics and analysis of quantitative traits*. Sinauer Associates.

- Meuwissen, T. H. E. and Luo, Z. (1992). Computing inbreeding coefficients in large populations. *Genet. Sel. Evol.*, 24:305–313.
- Oliehoek, P. A., Windig, J. J., van Arendonk, J. A. M., and Bijma, P. (2006). Estimating relatedness between individuals in general populations with a focus on their use in conservation programs. 173:483–496.
- Sargolzaei, M., Iwaisaki, H., and Colleano, J.-J. (2005). A fast algorithm for computing inbreeding coefficients in large populations. *J. Anim. Breed. Genet.*, 122(5):325–331.